Fort Lewis, Locomotive Shelter (Building 1 P-99)
South side of South Drive
Fort Lewis
Pierce County
Washington

HABS No. WA-199-A

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Building Survey
National Park Service
Western Region
Department of the Interior
San Francisco, California 94107

HISTORIC AMERICAN BUILDINGS SURVEY

FORT LEWIS, BUILDING 1-B-99 (LOCOMOTIVE SHELTER)
HABS NO. WA-199-A

Location: South side of South Drive, in Block B of the area known as North Fort Lewis, Pierce County, Washington.

USGS Quadrangle Fort Lewis, Washington; 7.5 minute series 1973; UTM Coordinates: Zone 10.528700 E 5217840 N

Present Owner: United States Army

Original Use: Facility for the repair and storage of railroad locomotives and related equipment.

Present Use: Currently used as a general storage facility.

Significance: According to inventory records maintained by the United States Army Corps of Engineers, Construction Engineering Research Laboratory (USACERL), Building 1-B-99 is one of two remaining structures that served as train locomotive maintenance sheds dating from the Second World War mobilization efforts (the other building is located at Fort Drum, New York, and has been documented as HABS Number NY-6337-D). The construction techniques utilized in this building exemplify those used in most of the facilities that were built based on the Theater of Operations standard construction designs developed in 1942 by the War Department for the mobilization effort during World War II.[1]

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: Based on the Real Property Record for this structure, the construction of Building 1-B-99 was completed on November 10, 1944, and was constructed according to Plan Number T. O. 1300-240 of the standard War Department drawings; this drawing is dated April 23, 1943.[2]

2. Architect: Colonel James H. Stratton, Chief of the Engineering Branch of the Construction Division, Corps of Engineers. In January, 1942, he directed the adaptation of the standard Theater of Operations drawings, which were utilized overseas, for use in the United States. District Engineers were assigned various aspects of modifying the drawings, with complete sets of plans being delivered by the end of January.[3]

3. Original and subsequent owners: The original 70,000 acres of Fort Lewis were first purchased by the citizens of the City of Tacoma and Pierce County, who

donated the land to the United States Government in 1919[4]; the United States Army is the current owner.

4. Builder, contractor, suppliers: The contractor for Building 1-B-99 is not known; there were many different contractors involved in the various building projects being undertaken at Fort Lewis from 1940 to 1944. As of April 1941, most of the construction of the north section of Fort Lewis was carried out by Sound Construction and Engineering Company of Seattle, in conjunction with Peter Kiewit of Omaha, Nebraska. Together these two firms constructed the majority of the 41st Division cantonment--almost 1,000 buildings--the bulk of which were barracks.[5] Many of the suppliers of the material used during the construction of cantonment were local; construction workers came from the surrounding area as well as from neighboring states.[6]

5. Original plans and construction: Building 1-B-99 was constructed from Plan Number T. O. 1300-240, from the modified Theater of Operations Series of standard construction drawings. Other drawings from this series were used to construct this building: T. O. 1300-241, T. O. 1300-242, T. O. 1300-243, T. O. 700-5002, T. O. 700-5100, and T. O. 700-5106.[7] The drawings are currently filed at the Directorate of Engineering and Housing, Fort Lewis. The original cost of the building was $2759.00.[8]

6. Alterations and additions: When comparing the building with the drawings cited above, the most obvious difference is the location of the shed additions which occur on the opposite side of the building from that shown on the plans. This is not actually an alteration but is the result of the conditions found at this particular site, namely the location of the railroad tracks. Later alterations include the addition of asbestos shingle siding to the exterior, the modification of the coal bin, the extension of the eaves, and the replacement of some of the windows. Inside, the pit in the main space has been filled in and a concrete slab has been poured, a ceiling has been added in the sand drying room, some partitions have been erected to create a toilet room, and fluorescent lights have been installed in the main space; the window in the oil storage room has been blocked in with plywood. Also, a platform has been inserted at the south end of the main section of the building.

B. Historical Context:

North of the present day site of Fort Lewis, a trading post, Fort Nisqually, was established in the early 1830s; earlier in the century part of the Lewis and Clark Expedition had explored the Columbia River region approximately 80 miles to the south. Great Britain surrendered claim to the Washington Territory in 1846, and three years later an army post was created at Fort Steilacoom to protect settlers from Indian reprisals. During the latter part of the nineteenth century and the early part of the twentieth century, this area was the site of extensive training for the state militia and national guard; Army-National Guard maneuvers occurred here in 1904 under the observation of General Arthur MacArthur, father of Douglas MacArthur.[9]

In spite of the tremendous precedent of the use of this area for military exercises, it was almost overlooked in 1916 when the United States Army conducted its search for

a site for a post in the Pacific Northwest. Had it not been for a concerted effort by a group from the nearby city of Tacoma, Fort Lewis might not have materialized.[10] The citizens of Tacoma and Pierce County voted to issue $2,000,000 in bonds to purchase 70,000 acres located in Pierce County in order to donate the land to the federal government, the first contribution of this type in the history of the country.[11] The construction of the post was begun in haste as the result of the start of World War I, and it was not until the end of the war that the land actually became the property of the United States. The installation was named Camp Lewis in honor of Captain Meriwether Lewis, a leader of the Lewis and Clark Expedition; in 1927, it was renamed Fort Lewis as the result of its designation as a permanent military post.[12]

Construction of several permanent brick buildings occurred at the post until 1939; afterwards, due to the country's involvement in World War II, structures were of a temporary nature.[13] The arrival of the 41st Division of the National Guard in September of 1940[14] sparked the construction of a cantonment in the north part of the post, the bulk of which were barracks that were in place by April of 1941.[15] Several more structures were built in North Fort Lewis over the next couple of years, including warehouses, officers quarters, chapels, and medical facilities, to name a few.[16]

Building 1-B-99, completed in November 1944, is one of the temporary facilities constructed after the first wave of activity in 1940-41; it is the only type Shel-B-D structure built in the north section of Fort Lewis, and is located in Block B of this part of the installation.[17] Due to shortages incurred nationwide as the result of the massive mobilization effort for World War II, a determination was made by Colonel James H. Stratton, the Chief of the Engineering Branch of the Construction Division, Corps of Engineers, to modify the standard Theater of Operations designs for use in the United States. Up until January 1942, the Theater of Operations drawings were used for facilities constructed overseas, but Stratton felt that the adaptation of these plans would assist in easing the strain of supply shortages. These temporary mobilization structures not only exhibited the assembly-line methodology utilizing pre-cut lumber, but also used exterior finishes such as 15 pound felt with wood battens to further reduce the costs. Ultimately, Stratton's tactics did result in tremendous savings for the government.[18]

PART II. ARCHITECTURAL INFORMATION

A. General Statement

1. Architectural Character: Building 1-B-99, is a fairly intact example of a World War II-era Locomotive Shelter (Type Shel-B-D) constructed according to the modified Theater of Operations Series of standard War Department plans that were used in the United States. Built in 1944, the main part of the structure is linear in overall appearance and is accentuated with approximately 12' tall composite windows. A large, tall vent stack protrudes from the roof at the south end of the building, used to exhaust fumes and gases generated by the locomotives serviced; obviously this is a feature necessary to the historic function of the building.

2. Condition of Fabric: The structure is in fair condition overall. Some of the asbestos shingles are broken or chipped, but the paint finish at the exterior is in fairly good condition. The wood windows and trimwork are deteriorated, with some of the glass panes having been replaced. Moss is growing on the shed roofs located at the east side; otherwise the roofing material appears to be in fair condition.

B. Description of Exterior

1. Overall Dimensions: The Locomotive Shelter is basically an elongated rectangle in shape, measuring roughly 22'- 0" (north and south elevations) by 79'- 2" (east and west elevations). There are also three shed additions located at the south end of the east facade; the sand drying room extends 16'- 0" from the main portion and is 24'- 0" long, the oil storage room and the coal bin each measure 7'- 0" x 8'- 0" overall. The height of the main section from grade to the roof ridge is approximately 24'- 0"; the tallest shed roof is about 16'- 0" above the ground.

2. Foundations: According to Plan Number T. O. 1300-240, running under most of the walls of the building is an 8" wide poured concrete foundation wall that is about 12" above grade. One exception to this is occurs where the oil storage room adjoins the main part of the building; here the foundation wall is 17½" wide. The other deviation happens in the bay containing the large vent hood; here the foundation wall extends out 4" for a length of 12" at each column support location. The existing plans are vague concerning the composition of the footings, if any do exist.[19]

3. Walls: At the main section of the building and at the sand drying room are stud walls to which wood sheathing is nailed and this is covered by a layer of black felt and 12" x 24" asbestos siding. The felt might be the original exterior finish, but due to the nondestructive methods used it was not possible to make a determination on this subject. The concrete blocks at the oil storage room are exposed on the exterior.

4. Structural systems, framing: The walls of the main section are composed of 2" x 8" wood studs at 2'-0" on center; there are 2" x 8" horizontal girts let in between the studs. The sill is composed of a single 2" x 8", continuous, bolted to the foundation wall at 48" on center; the top plate is also a single 2" x 8", continuous, 17'- 8" above the finished floor. There are four sets of triple 2" x 10"s that act as columns and support the vent hood structure. There are 2" x 4" diagonal knee braces at each stud along the east and west walls, except at the windows and at the vent hood bay. Each knee brace supports a truss at 24" on center, composed of a single 2" x 4" at the bottom chord, top chord, and at the diagonal webs; the vertical web at the centerline of the truss is a single 1" x 6". As added reinforcement, there are 2" x 6" scabs at the ends and a 2" x 8" scab at the ridge. At the both the north and south 8'- 0" wide bays, nailed to the underside of the top chord of those trusses, are diagonal 1" x 6" braces.

At the vent hood bay, there are two trusses running east/west, one at each end of the vent hood. At each side are diagonal knee braces that are composed of

double 2" x 6"s that are spaced and are bolted to the triple 2" x 10" columns; the double 2" x 6"s die into the bottom chord, which is made up of double 2" x 4"s, spaced. At the same angle as the braces, a single 2" x 6" spacer extends from below the bottom chord to about the midpoint of the double 2" x 6" top chord. From this point a single 2" x 6" diagonal web extends to the centerline of the truss, where there are two vertical 1" x 4" webs each nailed to the outside face of the truss. There are 2" x 8" scab members reinforcing the ends and the ridges of these trusses.

Between the trusses at the vent hood and at either side of the ridgeline are three 2" x 6" rafters supported by a 2" x 8" running north/south between the underside of the top chord of the trusses. The 2" x 8" is supported by two 2" x 4" vertical hangers on ether side and two horizontal 2" x 4"s below. The center 2" x 6"s do not continue to the ridge to allow a clear area for the vent stack.

The walls at the sand drying room are made of 2" x 4"s at 2'- 0", and the oil storage room is constructed of 8" wide concrete blocks. The roof framing consists of 2" x 8" rafters at 36" on center at the sand drying room, and 2" x 6"s at the oil storage room.

5. Chimney: There is a cement asbestos smoke jack that is located at the south end of the main section of the building; it is 36" in diameter and extends about 10'- 0" above the roof. It is topped by what probably is a cement asbestos board cap; there is a protective overhang made of cement asbestos located about 24" above the ridgeline that shelters additional vents. The smoke jack is connected to the roof structure with metal anchor rods and to the roof surface with metal guy wires.

6. Openings:

   a. Doorways and Doors: Two large hinged warehouse doors dominate the north elevation; each measures 6'- 6" wide x 17'- 0" tall. The horizontal stiles at the top and bottom of the doors are composed of 2" x 10"s; the vertical stiles are 2" x 8"s, and there are two intermediate horizontal 2" x 8" members per door. Centered in the lower panel of each door is a vertical 2" x 8" member; each panel is filled in with 1" x 4" diagonal tongue and groove sheathing. The strap hinges are probably composed of cast iron, and range in height from 9½" to 7½" and are about 28" long; they are bolted to a 4" x 8" frame. There is a unique feature located at the lower lefthand panel of the east door called a pilot door; this feature is more easily detected from the interior.

   The only other exterior door is a plain wood one located on the north side of the sand drying room; it measures 3'- 6" x 6'- 8" and is probably not original.

   b. Windows: There are ten composite wood windows located in the main section of the building; three at the east, five at the west, and two at the south. The lower portion of each unit is made up of a 16-over-16

double-hung segment measuring 3'- 4½" wide x 6'- 6½"; this unit differs from that shown on the drawings, which is a 12-over-12 window. The upper portion of the composite window is composed of a fixed sixteen light wood unit; the two parts are divided by a 4" wide piece of trim, and the surrounding trim is the same width. At the sand drying room are three 8-over-8 wood double-hung sash units, one at the south facade and two at the east; the 4" wide wood trim is typical and each is 3'- 4½" x 4'- 6". The remaining window is located at the east elevation in the oil storage room, and it is a six light fixed unit measuring 2'- 7" wide x 2'- 5" tall.

7. Roof:

   a. Shape, Covering: The gable roof at the main section of the Locomotive Shelter has a pitch of 5 in 12; the shed roofs at the additions all have a 3½ in 12 slope. The ridge of the main section runs north/south and all areas are covered with asphalt shingle roofing material. There is no evidence to indicate whether or not the ridge ventilators were installed as shown on Plan Number T. O. 1300-240.[20]

   b. Cornice, Eaves: The eaves at the main section and at the sand drying room have been extended approximately 18" on the east and west sides, and about 8" on the north and south sides; this work is clearly an alteration. The extensions are composed of 2" x 6" rafters with a 2" x 6" fascia board; the raking cornices are also 2" x 6"s.

8. Coal Bin: The overall size is 7'-10" x 8'-0" and it is centered on the east wall of the sand drying room. The base is composed of an 8" wide, 1'-5" tall poured concrete wall; the flooring is also poured concrete and slopes down towards the building. 2" x 4" wood sills are bolted to the north and south walls, and these support the corner posts and the 2'-2" tall stud walls that extend between the posts. The stud walls are finished on the inside with 1" thick random width horizontal planks; the exterior sides are not finished. The shed roof is probably a later addition; there is no roof indicated on Plan Number T.O. 1300-240. The roof is composed of six-2" x 4" rafters that are supported at the east end by a double 2" x 6" resting on the posts, the west end of the roof is supported by a 2" x 4" plate nailed to the building. There is a poured concrete pad measuring 4'-9" x 8'-0" that extends from the coal bin to the east.

C. Description of Interior:

1. First Floor Plan: The floor plan of the main section is a simple rectangle measuring approximately 20'- 0" x 78'- 0"; the sand drying room is about 15'- 0" x 23'- 0", and the oil storage room is about 6'- 0" x 7'- 0". Partitions have been added to the northwest corner of the sand drying room to create a toilet room that measures about 5'- 6" x 8'- 0".

2. Stairways: The stairs that exist are later additions, as is the platform that is associated with them.[21] The stairs are made of 2" x 6" treads and stringers; the handrail is a 2" diameter round steel tube. The platform is constructed of 2" x 6" joists and fascia boards supported by 3½" square wood posts; the flooring is plywood and is 4'- 2" wide. The handrail and vertical balusters are 1½" x 4" wood members with three rows of 1" diameter wood dowels running horizontally.

3. Flooring: All floor surfaces consist of poured concrete with a troweled finish.

4. Wall and Ceiling Finish: The studs and trusses are exposed at the walls and ceiling of the main section of the building. Gypsum board has been added to the walls and ceilings of the sand drying room.

5. Openings:

   a. Doorways and Doors: The inside face of the large hinged doors at the north end of the building are reinforced with 2" x 6" crossed diagonal braces that are located in the upper two panels of the doors. The pilot door is situated in the lower right hand corner of the east door; it measures roughly 2'- 4" x 4'- 6" and is framed with 2" x 6"s on all four sides. The hardware at the large doors has either been modified or was not installed according to the plans; the pilot door hardware is original, as shown on Drawing Number T. O. 1300-241.[22]

      There is a 3'- 6" x 6'- 8" wood door with five horizontal panels on both sides between the sand drying room and the main section of the building; the 4" wide wood trim is plain. A wood door measuring 3'- 6" x 6'- 5" opens into the oil storage room, the outside face has five horizontal panels, the inside face is plain; the head trim is 4" wide and the jamb trim is 2½" wide. The door into the toilet room is a five horizonal panel door that is 2'- 6" x 6'- 8"; it has 4" wide plain wood trim.

   b. Windows: The some of the panes of the windows at the main section of the building have been painted. The window trim at the head and jambs is 2" wide, at the sill it is 3" wide.

6. Hardware: Some of the door hardware appears to be original; all of the window hardware appears to be original.

7. Mechanical Equipment:

   a. Heating, Air Conditioning, Ventilation: No heating equipment was observed. There is a vent stack extending through the roof of the sand drying room where a toilet has been added.

   b. Lighting: There are nine fluorescent light fixtures located in the main section of the building. There are two porcelain bases with incandescent bulbs, one each located in the center of the ceiling in the oil storage room and the toilet. There is a pendant-type spot fixture

located at the south end of the main section; it appears to date from the 1940s, but is wired to the underside of the platform, which was added later.

c. Plumbing: There is one toilet and one lavatory, both of which are later alterations and are of unknown manufacture.

8. Other: The most notable interior feature is the large metal vent hood that is situated in the south end of the main section of the building. According to Drawing Number T. O. 1300-241, at its lowest part, the hood measures 4'- 0" x 10'- 0", the short ends being rounded. Gradually tapering up to the point where the hood intersects with the roof, it forms a 36" diameter opening; the appearance is much like that of an inverted funnel. It appears to be manufactured of some type of galvanized metal; the sections are bolted together. The hood is supported by two steel angle sections that are bolted to the long sides of the feature; the angles are connected to the underside of the bottom chords of the two trusses that are described above. The angles are further stabilized by steel rods that are anchored to the trusses.

Also of note is the original blast plate that is composed of sections of cement asbestos board and is connected to the trusses just to the north of the vent hood. It is 6'- 0" wide and approximately 50'- 0" long; see Drawing Number T. O. 1300-241 for further information.[23]

D. Site:

1. General Setting and Orientation: Building 1-B-99 faces north, and is located just at the end of, and on the south side of, South Drive. It is one of the structures situated in Block B of the area of the installation known as North Fort Lewis. The topography of this area of the post is generally flat.

2. Historical landscape design: The section of the post known as North Fort Lewis is composed of two basic parts: the barracks area and the service area. The barracks and associated structures flank a large rectangular parade ground, and is organized into four sections, or blocks. The service area is located southwest of the barracks; Building 1-B-99 is situated in the service area just south of several warehouses in Block B. The railroad tracks run just to the west of the building.

PART III. SOURCES OF INFORMATION

A. Architectural Drawings: Beginning in 1942, the War Department produced drawings adapted from the Theater of Operations (T.O.) Series of standard construction plans and details. The primary drawing used to construct Building 1-B-99 was Plan Number T.O. 1300-240; other drawings from this series used on this building were T.O. 1300-241, T.O. 1300-242, T.O. 1300-243, T.O. 700-5002, T.O. 700-5100, and T.O. 700-5106.

Field observations and measurements revealed that Building 1-B-99 was constructed as shown on the above referenced drawings. Alterations to this building have been noted in the appropriate sections of this report. All of the drawings cited in the Bibliography have been photographically reproduced for this report. Currently the drawings are filed at the Directorate of Engineering and Housing, Building 4301, Fort Lewis.

B. Bibliography:

1. Primary and unpublished sources:

a. War Department drawings:

i. Office of the Chief of Engineers. Construction Division, Washington, D.C. "Shelter-Locomotive, TypeShel-B-D, Plans, Elevations & Sections, " Drawing Number T.O. 1300-240, April 23, 1943.

ii. Office of the Chief of Engineers. Construction Division, Washington, D.C. "Shelter-Locomotive, TypeShel-B-D, Plans, Miscellaneous Details," Drawing Number T.O. 1300-241, April 23, 1943.

iii. _____. _____. "Shelter-Locomotive, Roof Framing Plan and Details," Drawing Number 1300-242, April 23, 1943.

iv. _____. _____. "Shelter-Locomotive, Electrical & Plumbing," Drawing Number T.O. 1300-243, April 23, 1943.

v. _____. _____. "Standard Alternate Siding Details for T.O. 700 Series Building," Drawing Number T.O. 700-5002, August 14, 1942.

vi. _____. _____. "Standard Window Details for T.O. 700 Series Buildings," Drawing Number T.O. 700-5100, August 20, 1942.

vii. _____. _____. "Standard Door Details for T.O. 700 Series Buildings," Drawing Number T.O. 700-5106, [date is illegible].

b. Drawing Produced at Fort Lewis

U.S. Engineer Office. The Resident Engineer, Fort Lewis, Washington. "Fort Lewis North (Formerly 41st Division Area), Completion Map [site plan of Block B]," Sheet 8 of 16 [no drawing number], 1944.

b. Other records at Fort Lewis:

i. "Real Property Record. Buildings. Building 1-B-99," [no date]. Filed at Real Property Branch, Directorate of Engineering and Housing, Building 4301, Fort Lewis.

ii. "Fort Lewis - A History", February 1, 1986, Photocopy provided by Environmental Division, Directorate of Engineering and Housing.

2. Secondary and published sources:

a. Books and manuscripts:

Fine, Lenore and Jesse A. Remington. *The Corps of Engineers: Construction in the United States.* [volume in the series, *United States Army in World War II: The Technical Services.*] Washington, D.C.: Office of the Chief of Military History, United States Army, 1972.

b. Newspaper articles (chronological listing):

"13 Troop Trains Bringing Guardsmen to Camp Murray Today", *Tacoma Times*, September 23, 1940.

"Structures at Fort Lewis Go Up Almost Like Magic Under Defense Program," *Tacoma Times*, January 16, 1941.

"Contractors on Defense Projects Are Proud of Record of No Fatalities!" *Tacoma Times*, April 24, 1941.

"Gigantic Spurt in New Ft. Lewis Construction," *Tacoma Daily Ledger*, May 11, 1941.

"Fort Lewis Vital in Army Training," *Tacoma News Tribune*, April 27, 1943.

D. Likely Sources Not Yet Investigated:

Documentary: Further research could be conducted at the libraries in Seattle to locate additional information on the firm of Sound Construction and Engineering Company. Information might be obtained in Omaha, Nebraska, on the firm of Peter Kiewit, which collaborated on the construction of the north section of the post. Additional information about Colonel James H. Stratton and his role in the development of the modified Theater of Operations War Department drawings is probably located in the National Archives, Washington, D.C.

E. Supplemental Material:

1. Drawings: The drawings cited in the Bibliography have been photographically reproduced and are included in this report.

2. Photographs: Large-format photographs of Building 1-B-99 are included as supplemental material.

PART IV. PROJECT INFORMATION

This report was prepared by the Center for Architectural Conservation, Georgia Institute of Technology, as part of a project to document a representative type of a World War II-era temporary mobilization structure at Fort Lewis during July, 1992. The project was sponsored by the Tri-Services Research Center, United States Army Corps of Engineers, Construction Engineering Research Laboratory (USACERL), Champaign, Illinois. Keith Landreth, Director of the Tri-Services Research Center, provided assistance throughout the project. Assistance at Fort Lewis was provided by Cathy Jerbic, Environmental Division, Directorate of Engineering and Housing. Large-format photography was done by Martin Stupich.

NOTES:

1. Lenore Fine and Jesse A. Remington. *The Corps of Engineers: Construction in the United States.* [volume in the series, *United States Army in World War II: The Technical Services*]. Washington D.C.: Office of the Chief of Military History, U.S. Army, 1972, pp. 526-28.

2. Office of the Chief of Engineers. Construction Division, Washington, D.C. "Shelter-Locomotive, Type Shel-B-D, Plans, Elevations & Sections," Drawing Number T.O. 1300-240, April 23, 1943.; and "Real Property Record. Buildings. Building 1-B-99," [no date]. Filed at Real Property Branch, Directorate of Engineering and Housing, Building 4301, Fort Lewis.

3. Fine and Remington, p. 524, 526-28.

4. "Fort Lewis - A History", February 1, 1986, p. 6. Photocopy provided by Environmental Division, Directorate of Engineering and Housing.

5. "Contractors on Defense Projects Are Proud of Record of No Fatalities!" *Tacoma Times*, April 24, 1941.

6. "Structures at Fort Lewis Go Up Almost Like Magic Under Defense Program," *Tacoma Times* January 16, 1941.

7. Office of the Chief of Engineers. Construction Division, Washington, D.C. "Shelter-Locomotive, Type Shel-B-D, Plans, Elevations & Sections," Drawing Number T.O. 1300-240, April 23, 1943; Office of the Chief of Engineers. Construction Division, Washington, D.C. "Shelter-Locomotive, Type Shel-B-D, Plans, Miscellaneous Details," Drawing Number T.O. 1300-241, April 23, 1943; Office of the Chief of Engineers. Construction Division, Washington, D.C. "Shelter-Locomotive, Roof Framing Plan and Details," Drawing Number 1300-242, April 23, 1943; Office of the Chief of Engineers. Construction Division, Washington, D.C. "Shelter-Locomotive, Electrical & Plumbing," Drawing Number T.O. 1300-243, April 23, 1943; Office of the Chief of Engineers. Construction Division, Washington, D.C. "Standard Alternate Sliding Details for T.O. 700 Series Building," Drawing Number T.O. 700-5002, August 14, 1942; Office of the Chief of Engineers. Construction Division, Washington, D.C. "Standard Window Details for T.O. 700 Series Buildings," Drawing Number T.O. 700-5100, August 20, 1942; and Office of the Chief of Engineers. Construction Division, Washington, D.C. "Standard Door Details for T.O. 700 Series Buildings," Drawing Number T.O. 700-5106, [date is illegible].

8. "Real Property Record. Buildings. Building 1-B-99," [no date]. Filed at Real Property Branch, Directorate of Engineering and Housing, Building 1-B-99, Fort Lewis.

9. "Fort Lewis - A History", 1 February 1986, Photocopy provided by Environmental Division, Directorate of Engineering and Housing, pp. 1-2.

10. "Fort Lewis - A History", 1 February 1986, Photocopy provided by Environmental Division, Directorate of Engineering and Housing, p. 3.

11. "Fort Lewis Vital in Army Training," *Tacoma News Tribune*, April 27, 1943.

12. "Fort Lewis - A History", 1 February 1986, Photocopy provided by Environmental Division, Directorate of Engineering and Housing, pp. 4, 6, 7, 10.

13. "Fort Lewis - A History", 1 February 1986, Photocopy provided by Environmental Division, Directorate of Engineering and Housing, p. 12.

14. "13 Troop Trains Bringing Guardsmen to Camp Murray Today", *Tacoma Times*, September 23, 1940.

15. "Contractors on Defense Projects Are Proud of Record of No Fatalities!" *Tacoma Times*, April 24, 1941.

16. "Gigantic Spurt in New Ft. Lewis Construction," *Tacoma Daily Ledger*, May 11, 1941.

17. Office of the Chief of Engineers. Construction Division, Washington, D.C. "Shelter-Locomotive, Type Shel-B-D, Plans, Elevations & Sections," Drawing Number T.O. 1300-240, April 23, 1943; and U.S. Engineer Office. The Resident Engineer, Fort Lewis, Washington. "Fort Lewis North (Formerly 41st Division Area), Completion Map [site plan of Block B]," Sheet 8 of 16 [no drawing number], 1944.

18. Fine and Remington, pp. 526-528.

19. Office of the Chief of Engineers. Construction Division, Washington, D.C., Drawing Number T.O. 1300-240.

20. Ibid.

21. Based on information provided by the Directorate of Engineering and Housing, the platform and stairs were added in the 1980s.

22. Office of the Chief of Engineers. Construction Division, Washington, D.C. "Shelter-Locomotive, Type Shel-B-D, Plans, Miscellaneous Details," Drawing Number T.O. 1300-241, April 23, 1943.

23. Ibid.